

25. (amended) The method of claim 17 wherein configuring and arranging said current sensor comprises coupling said load conductors with [conductors wound in opposite directions] a coil wound around a magnetic core.

### **REMARKS**

#### **Priority**

Submitted herewith is a substitute declaration that includes a reference to the parent application Serial No. 09/426,832 from which priority is claimed in the present application. The specification has been amended to remove the cross-reference to the second prior application, namely, Serial No. 09/026203.

#### **Information disclosure statement**

Submitted herewith are the references that the Office Action indicates were not received with the Information Disclosure Statement.

#### **Drawing objections**

Proposed drawing amendments to FIG. 1-4 are submitted herewith to respond to the Examiner's objections to the original drawings. A new FIG. 7 has been added to address the Examiner's objection that the referenced "Hal effect sensor" was not shown in the drawings, and page 13 of the specification has been amended to refer to the new figure. Page 11, line 2, of the specification has been amended to assign reference number 63 to the "arc detector," and FIG. 3 has been modified to show this reference number.

#### **Specification objections**

A spelling correction on page 9 and a suggested word change from the use of "wires" to "conductors," as suggested by the Examiner, have been made by the above amendments to the specification.

#### **Rejection of Claims 11 and 27 under 35 U.S.C. 112**

With respect to the rejection of claims 11 and 27 as based on a specification that "does not provide sufficient information for one having skill in the art to make or use the invention," it should be noted that page 14, line 16, teaches the use of a "differential current sensor.....such as bimetal elements which produces a motion...." To one skilled in the art,

the use of bimetallic devices and the movement produced by such devices in reaction to temperature changes or, as in this case, current differentials is well known. For example, Tieman U.S. Patent No. 6,111,489 discloses a circuit breaker incorporating a bi-metallic mechanism as discussed. Products that use the movement of bimetallic devices to trip switches, latches and other mechanical devices have been on the market for a number of years.

**Rejection of Claims 9 and 25 under 35 U.S.C. 112**

Claims 9 and 25 have been amended to clarify the language that the Examiner considered "confusing." Specifically, the two conductors having antecedent basis in the parent claims 1 and 17 have now been identified as "load" conductors, consistent with the amendments to claims 1 and 17, and the conductor wound around the core is now identified as a "coil," which is the language used in the specification.

**Rejection of Claims 1, 2, 17 and 18 based on nonstatutory double patenting**

All the claims 1-32 of the present application were rejected on the basis of the applicant's own U.S. Patent No. 5,986,860. Specifically, original claims 1, 9, 13-14, 17, 25, 29 and 30 were rejected under 35 U.S.C. 102(b) based on the '860 patent, and all the remaining claims were rejected under 35 U.S.C. 103(a) based on the '860 patent in combination with one or more secondary references.

All the claims in the present application have been amended to bring into sharper focus the basic distinctions between the present invention and the disclosures found in the '806 patent and the various secondary references. Specifically, both the independent claims 1 and 17 have been amended to specify that the two conductors are both "load" conductors. The present invention can be used in an aircraft, where the fuselage of the aircraft is normally used as the return path, and thus only a single wire conductor is required. The '806 patent and certain of the secondary references show two conductors, but only one of them is a "load" conductor, and the other is used to provide a return path.

The present invention bifurcates the load conductor to form a pair of parallel load conductors, and then the current sensor is coupled to those parallel conductors to produce a signal responsive to the difference in current flow in the two load conductors. This allows the detection of faults in an aircraft without requiring a neutral conductor that would add significant weight to the aircraft. The load draws substantially equal currents through the two load conductors in the absence of a fault, but there is a measurable difference between the

two currents in the presence of a fault. This bifurcated load line system is not disclosed in the applicant's own '806 patent, nor in any of the various secondary references relied upon in the Office Action. Thus, no matter how these references might be combined, they cannot yield the invention as now defined by applicant's amended claims.

Accordingly, reconsideration of this application in light of the foregoing amendments and remarks is respectfully requested.

Attached hereto is a clean copy of the revised specification paragraphs captioned "Clean Specification Paragraphs After Entry of Amendment and Reply to office Action Mailed August 14, 2002" and the pending claims after entry of the present amendment captioned "Pending Claims After Entry of Amendment and Reply to Office Acton Mailed August 14, 2002."

It is believed that no fee is presently due; however, should any additional fees be required (except for payment of the issue fee), the Assistant Commissioner is authorized to deduct the fees from Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47181-00235.

Respectfully submitted, /



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Date

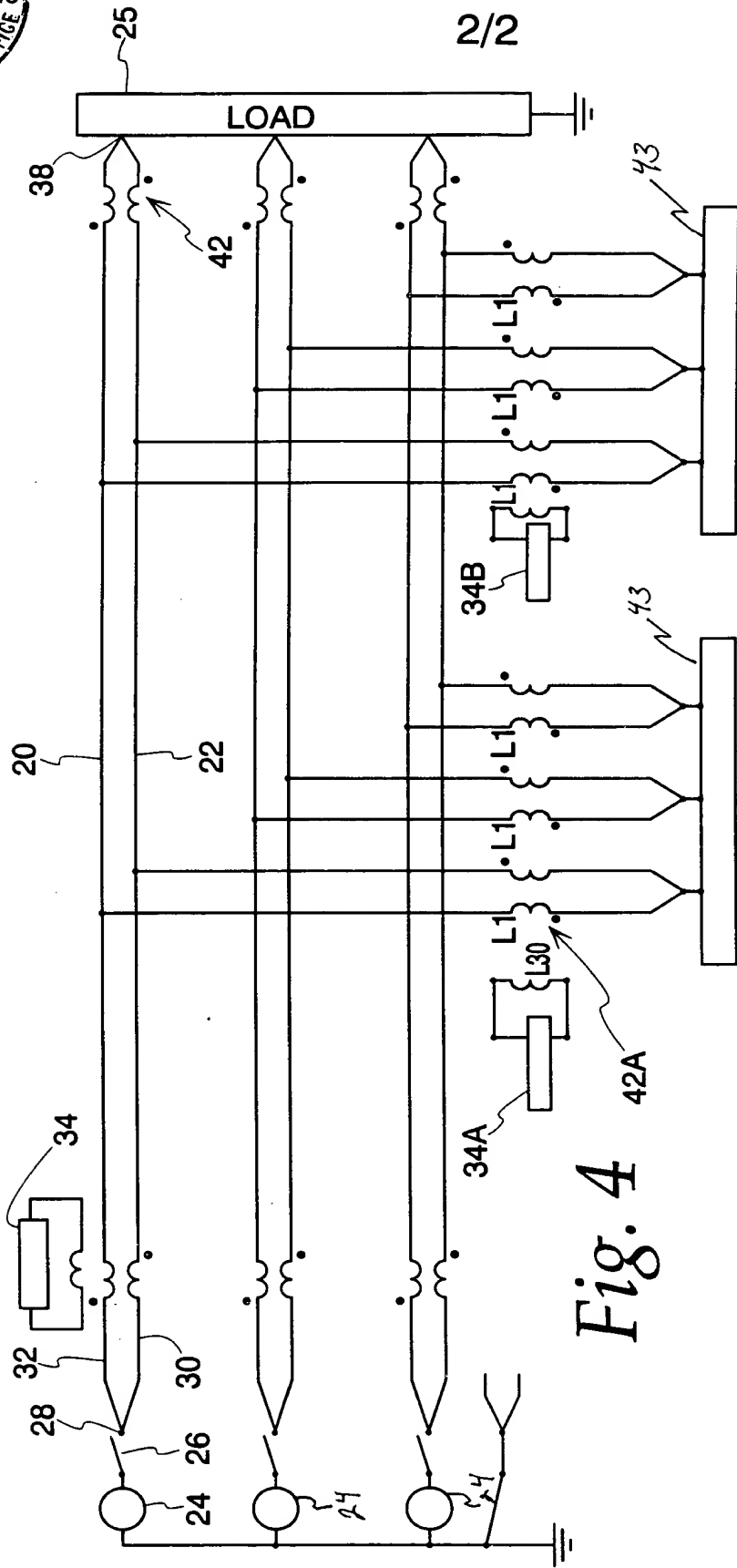


Fig. 4

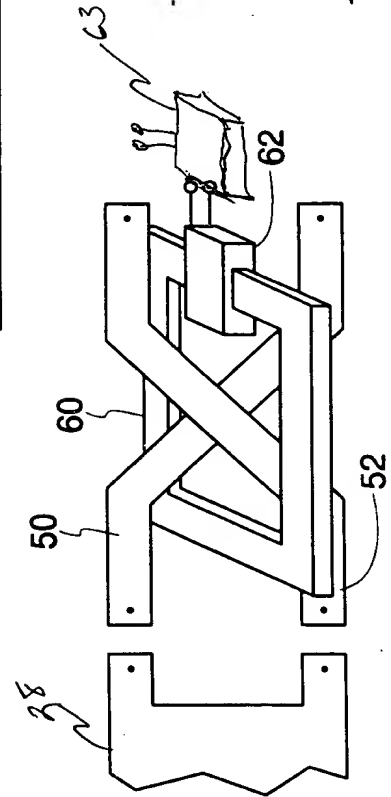


Fig. 3

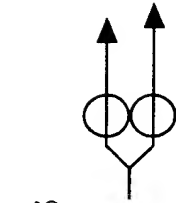


Fig. 5

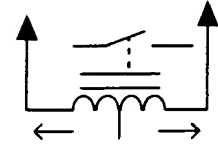


Fig. 6

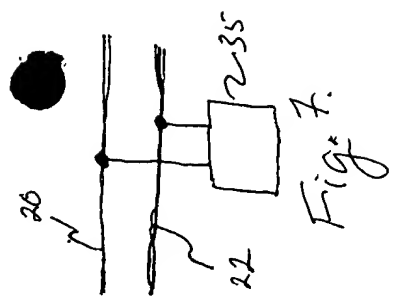


Fig. 7

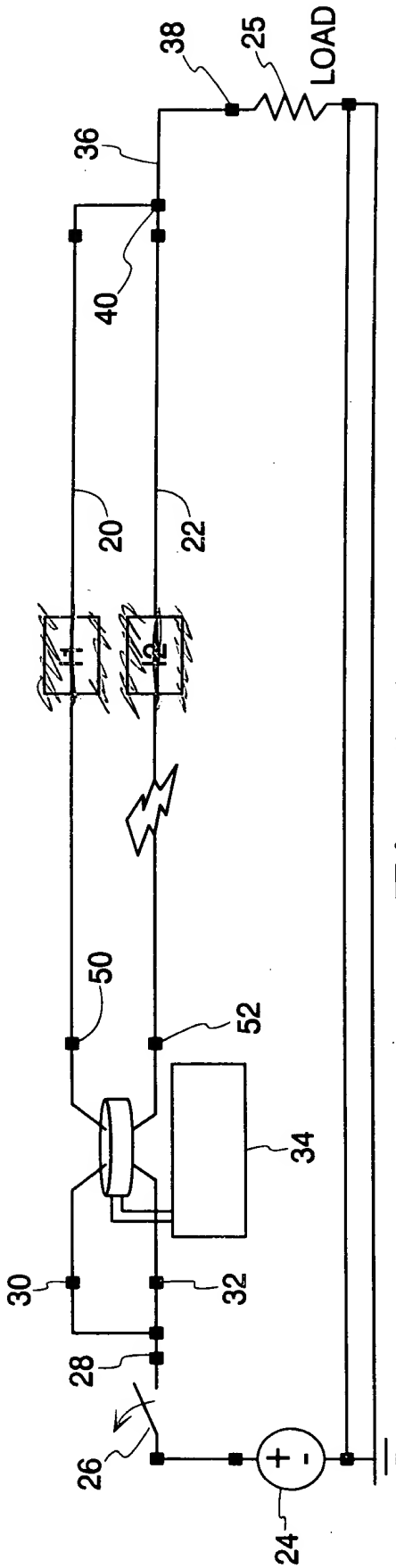


Fig. 1

1/2

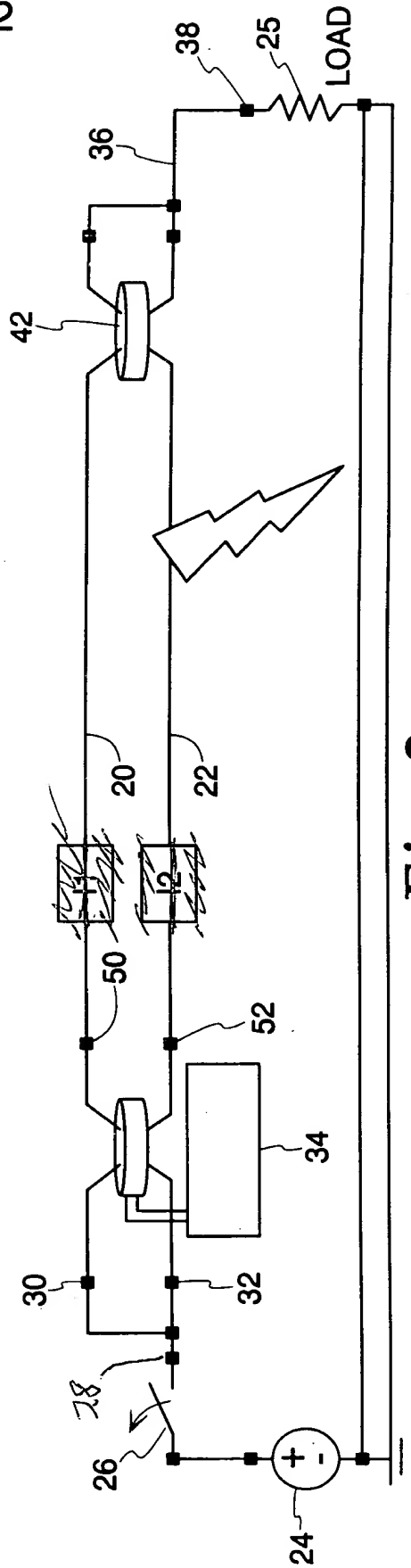


Fig. 2